A Year in the Life of a Seed

Wyoming Science

Objectives:

- The students will learn about the life cycle of seeds.
- Students will learn about the effects of seasons on seeds development.

Background:

Seeds come in different sizes, shapes and colors. Some are edible, some are not. The reason for the diversity is related to the seed's need to disperse and grow. Some seeds are light so that they can be carried by the wind, some stick to animal fur. Some are brightly colored to attract birds who carry them to other locations. Others are eaten by animals and deposited in the ground as part of the animals waste. However, all seeds have the same parts. A seed coat, to protect it, an embryo that is the baby plant, and an endosperm. That is the food that feeds the embryo until it is a seedling and can make its own food.

Activity Procedures:

1. Tell the students that they are about to embark on a safari in search of on of nature's wonders-seeds. Explain that people on a safari always bring special equipment. Divide the students in pairs and give each pair a specially designed seed-collecting container (the egg carton).
2. Explain that their mission while on safari is to fill each of the twelve compartments with a different type of seed. Pass each group another important piece of collecting equipment, specially designed to attract "hitch hiking" seeds (the old sock) Seeds stick to clothing or to animals are seeds that get a "free ride," so we call them "hitch hikers" Each partner can wear one over their shoes.
3. Then head out to a field, garden or other well seeded area in search of seeds.
4. After they have collected seeds, gather the class together (outdoors or inside). Have the students share their largest seed, their smallest seed, and their favorite seed.
5. Ask the student what all these seeds have in common.
   - What is the purpose of a seed?
   - What does it need to grow?

Standards

Science

Life Systems:
1.1, 1.2, 1.3

Earth, Space, & Physical Systems: 1.6

Materials

- Egg cartons
- (one for each pair)
- Old socks
- Old towel or baby blanket
- Quiet music and a tape or cd player
- Spray bottle
- Snack foods in small bags

Estimated Time

30 Minutes

Grades K-2

notes:

6. Have the students put their collection aside, and tell the students that they are about to experience the life of the seed.
7. Next, ask each student to plant themselves nearby in a comfortable spot.
8. Explain that in autumn, seeds are getting ready for a long winter rest. Have the students curl up tightly and pretend that they are little seeds just fallen to the ground. Ask the student what kinds of seeds they are.
9. Explain that each seed comes equipped with its own food to help it begin life in the spring. Give each student a small snack in a little bag. Stress, that in order to survive and grow into healthy plants, the seeds must not eat their food until the spring rain begins to fall.
10. Describe the coming of winter and snow and pretend to cover them with a blanket of snow. Drape baby blankets or towels gently over the student's shoulders to pretend to cover each student, repeating this until all the students are beneath a blanket of snow. If you are indoors this is a good time have the student pretend to be asleep through the winter
11. Next comes spring. Explain that the ground is gradually starting to warm up and the seeds slowly awaken. Encourage them to wiggle just a bit and yawn.
12. Once they feel the warm spring rains of your spray bottle, have them pop out a root and begin to drink water. Now the seeds uncurl and eat some of their food.
13. After they have enjoyed their snack, explain that they now have the energy to grow and spout from underground. On the count of three have them slide off their blanket and stretch their arms upward. If indoors, turn on the light at this time.
14. Play some quiet music and have them slowly rise to a standing position while stretching out their leaves (arms) to gather sunlight. Have them sway in the breeze and enjoy the sunshine.
15. Describe the change to summer with the plants now forming flower. Have the students encircle their heads with their arms and pretend to be a flowers basking in the sun.
16. The teacher should pretend to be a bee and buzz around visiting each flower and collecting nectar and pollen. Briefly discuss pollination.
17. Summer is coming to an end and fall is in the air. Have students flutter their arms in the air to indicate petals falling to the ground.
18. Explain that in every plant where there was a flower, a fruit has begun to grow.

19. Have the students widen their arms to indicate the fruit growing bigger and bigger until it falls to the ground, the fruit breaks open and something falls out to start the cycle anew. What is it? (Seeds)

Extensions and Variations:

- Have the students look over their seed collection and sort them into groups. Have two groups' trade collections and try to guess how the groups were determined. For younger students, give guidelines to help them sort their seeds; (*smooth verses rough, seeds that roll, seeds of a particular color, seeds that float or fly, etc.)*
- Look at and compare the collection of "hitch hiking" seeds.
- Try sprouting these new seeds by placing the toe of the sock in water. The sock soaks up water to allow the seeds to sprout and begin to grow.
- Transplant them and see if you can grow them to maturity under grow lights.

Questions for Investigation:

1. Do you think that the seeds you collected are alive? Why or Why not?
2. Why do seeds begin to grow in the spring?
3. Why do seeds come in different shapes, sizes and colors?

Materials Adapted from Project Seasons

vocabulary:

- *edible*
- *deposited*
- *safari*
- *germinate*
- *sprout*
- *transplant*